

## LISTAGE DES SEQUENCES

<110> Institut Pasteur

<120> ANTIGÈNES DE PLASMODIUM FALCIPARUM ET LEURS APPLICATIONS VACCINALES  
ET DIAGNOSTIQUES

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<151> 2001-05-16

<150> CA 2,346,968

<151> 2001-05-23

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980 985 990	
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995 1000 1005	
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tct cat gaa ata tct gaa cct Ser His Glu Ile Ser Glu Pro 1115	ggt ctt tct ggt aca Val Leu Ser Gly Thr 1120	act ggt aaa Thr Gly Lys 1125	3384
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gaa aca gat cct cga agt aat Glu Thr Asp Pro Arg Ser Asn 1145	gac caa gaa gat gct Asp Gln Glu Asp Ala 1150	act gac gat Thr Asp Asp 1155	3474
ggt gta gaa aat agt aga gat Val Val Glu Asn Ser Arg Asp 1160	gat aat aat agt ctc Asp Asn Asn Ser Leu 1165	tct aat agc Ser Asn Ser 1170	3519
gta gat aat caa agt aat gtt Val Asp Asn Gln Ser Asn Val 1175	tta aat aga gaa gat Leu Asn Arg Glu Asp 1180	cct att gct Pro Ile Ala 1185	3564
tct gaa act gaa gtt gta agt Ser Glu Thr Glu Val Val Ser 1190	gaa cct gag gat tca Glu Pro Glu Asp Ser 1195	agt agg ata Ser Arg Ile 1200	3609
atg act aca gaa gtt cca agt Met Thr Thr Glu Val Pro Ser 1205	act act gta aaa ccc Thr Thr Val Lys Pro 1210	cct gat gaa Pro Asp Glu 1215	3654
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gta gaa cct gtt gta cca aga Val Glu Pro Val Val Pro Arg 1235	gcc att gga gaa cca Ala Ile Gly Glu Pro 1240	atg gaa aat Met Glu Asn 1245	3744
tct gtg agc gta cag tcc cct Ser Val Ser Val Gln Ser Pro 1250	cct aat gta gaa gat Pro Asn Val Glu Asp 1255	ggt gaa aaa Val Glu Lys 1260	3789
gaa aca ttg ata tct gag aat Glu Thr Leu Ile Ser Glu Asn 1265	aat gga tta cat aat Asn Gly Leu His Asn 1270	gat aca cac Asp Thr His 1275	3834
aga gga aat atc agt gaa aag Arg Gly Asn Ile Ser Glu Lys 1280	gat tta atc gat att Asp Leu Ile Asp Ile 1285	cat ttg tta His Leu Leu 1290	3879
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tta cat tta tgt tgt gaa ata tca gat tat tgt tta aaa ttt ttc Leu His Leu Cys Cys Glu Ile Ser Asp Tyr Cys Leu Lys Phe Phe 1445 1450 1455	4374
aat cct aaa tcg ata gaa tac ttt gat tgt aca caa aaa gaa ttt Asn Pro Lys Ser Ile Glu Tyr Phe Asp Cys Thr Gln Lys Glu Phe 1460 1465 1470	4419
gat gac cct aca tat aat tgt ttt aga aaa caa aga ttt aca agt Asp Asp Pro Thr Tyr Asn Cys Phe Arg Lys Gln Arg Phe Thr Ser 1475 1480 1485	4464
atgtcatggt ataaaaattaa aaacaatata cattaatatg ttaataaaaa aaataatata	4524
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Arg Lys Asn Leu

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attttatttat tatagg gat gat gaa aaa gga ttc tac gat tct aat tta 4783  
Asp Asp Glu Lys Gly Phe Tyr Asp Ser Asn Leu  
1515 1520 1525

aat gat tct gct ttt gaa tat aat aat aat aaa tat aat aaa tta 4828  
Asn Asp Ser Ala Phe Glu Tyr Asn Asn Asn Lys Tyr Asn Lys Leu  
1530 1535 1540

cct tat atg tgtaaggaaa aaactaaaaa acaaaaaaaaa aaaaaaatat 4877  
Pro Tyr Met

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aatttttatt atttatttat ttattttttt ttttc gta gtt gat caa caa ata 4990  
Val Val Asp Gln Gln Ile  
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Thr Thr Thr Phe  
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Lys Glu Arg Pro Gln Gly Leu Asn Val Glu Thr Asn Asn Asn Asn  
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Asn Asn Asn Asn Asn Asn Ser Asn Ser Asn Asp Ala Met Ser Phe Val  
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Asn Glu Val Ile Arg Phe Ile Glu Asn Glu Lys Asp Asp Lys Glu Asp  
65 70 75 80



Lys Lys Val Lys Ile Ile Ser Arg Pro Val Glu Asn Thr Leu His Arg  
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Tyr Pro Val Ser Ser Phe Leu Asn Ile Lys Lys Tyr Gly Arg Lys Gly  
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Glu Tyr Leu Asn Arg Asn Ser Phe Val Gln Arg Ser Tyr Ile Arg Gly  
 115 120 125

Cys Lys Gly Lys Arg Ser Thr His Thr Trp Ile Cys Glu Asn Lys Gly  
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Ala Leu Gln Asp Leu Lys Asn Ser Gly Ser Glu Thr Thr Asp Arg Lys  
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Leu Leu Arg Asp Lys Val Phe Asp Ser Ala Met Tyr Glu Thr Asp Leu  
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Leu Trp Asn Lys Tyr Gly Phe Arg Gly Phe Asp Asp Phe Cys Asp Asp  
 195 200 205

Val Lys Asn Ser Tyr Leu Asp Tyr Lys Asp Val Ile Phe Gly Thr Asp  
 210 215 220

Leu Asp Lys Asn Asn Ile Ser Lys Leu Val Glu Glu Ser Leu Lys Arg  
 225 230 235 240

Phe Phe Lys Lys Asp Ser Ser Val Leu Asn Pro Thr Ala Trp Trp Arg  
 245 250 255

Arg Tyr Gly Thr Arg Leu Trp Lys Thr Met Ile Gln Pro Tyr Ala His  
 260 265 270

Leu Gly Cys Arg Lys Pro Asp Glu Asn Glu Pro Gln Ile Asn Arg Trp  
 275 280 285

Ile Leu Glu Trp Gly Lys Tyr Asn Cys Arg Leu Met Lys Glu Lys Glu  
 290 295 300

Lys Leu Leu Thr Gly Glu Cys Ser Val Asn Arg Lys Lys Ser Asp Cys  
 305 310 315 320

Ser Thr Gly Cys Asn Asn Glu Cys Tyr Thr Tyr Arg Ser Leu Ile Asn  
 325 330 335

Arg Gln Arg Tyr Glu Val Ser Ile Leu Gly Lys Lys Tyr Ile Lys Val  
 340 345 350

Val Arg Tyr Thr Ile Phe Arg Arg Lys Ile Val Gln Pro Asp Asn Ala  
 355 360 365

Leu Asp Phe Leu Lys Leu Asn Cys Ser Glu Cys Lys Asp Ile Asp Phe  
 370 375 380

Lys Pro Phe Phe Glu Phe Glu Tyr Gly Lys Tyr Glu Glu Lys Cys Met  
 385 390 395 400

Cys Gln Ser Tyr Ile Asp Leu Lys Ile Gln Phe Lys Asn Asn Asp Ile  
 405 410 415

Cys Ser Phe Asn Ala Gln Thr Asp Thr Val Ser Ser Asp Lys Arg Phe  
 420 425 430

Cys Leu Glu Lys Lys Glu Phe Lys Pro Trp Lys Cys Asp Lys Asn Ser  
 435 440 445

Phe Glu Thr Val His His Lys Gly Val Cys Val Ser Pro Arg Arg Gln  
 450 455 460

Gly Phe Cys Leu Gly Asn Leu Asn Tyr Leu Leu Asn Asp Asp Ile Tyr  
 465 470 475 480

Asn Val His Asn Ser Gln Leu Leu Ile Glu Ile Ile Met Ala Ser Lys  
 485 490 495

Gln Glu Gly Lys Leu Leu Trp Lys Lys His Gly Thr Ile Leu Asp Asn  
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Gln Asn Ala Cys Lys Tyr Ile Asn Asp Ser Tyr Val Asp Tyr Lys Asp  
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Ile Val Ile Gly Asn Asp Leu Trp Asn Asp Asn Asn Ser Ile Lys Val  
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Gln Asn Asn Leu Asn Leu Ile Phe Glu Arg Asn Phe Gly Tyr Lys Val  
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Gly Arg Asn Lys Leu Phe Lys Thr Ile Lys Glu Leu Lys Asn Val Trp  
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Trp Ile Leu Asn Arg Asn Lys Val Trp Glu Ser Met Arg Cys Gly Ile  
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Asp Glu Val Asp Gln Arg Arg Lys Thr Cys Glu Arg Ile Asp Glu Leu  
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Glu Asn Met Pro Gln Phe Phe Arg Trp Phe Ser Gln Trp Ala His Phe  
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Phe Cys Lys Glu Lys Glu Tyr Trp Glu Leu Lys Leu Asn Asp Lys Cys  
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Thr Gly Asn Asn Gly Lys Ser Leu Cys Gln Asp Lys Thr Cys Gln Asn  
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Val Cys Thr Asn Met Asn Tyr Trp Thr Tyr Thr Arg Lys Leu Ala Tyr  
660 665 670

Glu Ile Gln Ser Val Lys Tyr Asp Lys Asp Arg Lys Leu Phe Ser Leu  
675 680 685

Ala Lys Asp Lys Asn Val Thr Thr Phe Leu Lys Glu Asn Ala Lys Asn  
690 695 700

Cys Ser Asn Ile Asp Phe Thr Lys Ile Phe Asp Gln Leu Asp Lys Leu  
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Phe Lys Glu Arg Cys Ser Cys Met Asp Thr Gln Val Leu Glu Val Lys  
725 730 735

Asn Lys Glu Met Leu Ser Ile Asp Ser Asn Ser Glu Asp Ala Thr Asp  
740 745 750

Ile Ser Glu Lys Asn Gly Glu Glu Glu Leu Tyr Val Asn His Asn Ser  
755 760 765

Val Ser Val Ala Ser Gly Asn Lys Glu Ile Glu Lys Ser Lys Asp Glu  
770 775 780

Lys Gln Pro Glu Lys Glu Ala Lys Gln Thr Asn Gly Thr Leu Thr Val  
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Arg Thr Asp Lys Asp Ser Asp Arg Asn Lys Gly Lys Asp Thr Ala Thr  
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Asp Thr Lys Asn Ser Pro Glu Asn Leu Lys Val Gln Glu His Gly Thr  
 820 825 830

Asn Gly Glu Thr Ile Lys Glu Glu Pro Pro Lys Leu Pro Glu Ser Ser  
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Glu Thr Leu Gln Ser Gln Glu Gln Leu Glu Ala Glu Ala Gln Lys Gln  
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Lys Gln Glu Glu Glu Pro Lys Lys Lys Gln Glu Glu Glu Pro Lys Lys  
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Glu Glu Glu Glu Gln Lys Gln Glu Glu Glu Gln Gln Ile Gln Asp Gln  
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Ser Gln Ser Gly Leu Asp Gln Ser Ser Lys Val Gly Val Ala Ser Glu  
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Gln Asn Glu Ile Ser Ser Gly Gln Glu Gln Asn Val Lys Ser Ser Ser  
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Pro Glu Val Val Pro Gln Glu Thr Thr Ser Glu Asn Gly Ser Ser Gln  
 945 950 955 960

Asp Thr Lys Ile Ser Ser Thr Glu Pro Asn Glu Asn Ser Val Val Asp  
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Arg Ala Thr Asp Ser Met Asn Leu Asp Pro Glu Lys Val His Asn Glu  
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Asn Met Ser Asp Pro Asn Thr Asn Thr Glu Pro Asp Ala Ser Leu Lys  
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Thr	Val	Ser	Arg	Ile	Glu	Ser	Asn	Glu	Gln	Asp	Val	Gln	Ser	Thr
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Pro	Pro	Glu	Asp	Thr	Pro	Thr	Val	Glu	Gly	Lys	Val	Gly	Asp	Lys
1040						1045					1050			
Ala	Glu	Met	Leu	Thr	Ser	Pro	His	Ala	Thr	Asp	Asn	Ser	Glu	Ser
1055						1060					1065			
Glu	Ser	Gly	Leu	Asn	Pro	Thr	Asp	Asp	Ile	Lys	Thr	Thr	Asp	Gly
1070						1075					1080			
Val	Val	Lys	Glu	Gln	Glu	Ile	Leu	Gly	Gly	Gly	Glu	Ser	Ala	Thr
1085						1090					1095			
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1145						1150					1155			
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1175						1180					1185			
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1190						1195					1200			
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Lys	Arg	Ser	Glu	Glu	Val	Gly	Glu	Lys	Glu	Ala	Lys	Glu	Ile	Lys
1220						1225					1230			

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Glu	Thr	Leu	Ile	Ser	Glu	Asn	Asn	Gly	Leu	His	Asn	Asp	Thr	His
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1310						1315					1320			
Glu	His	Asn	Phe	Ser	Thr	Gln	Gln	Lys	Asp	Glu	Lys	Asp	Phe	Asp
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Thr	Glu	Asp	Ser	Met	Ser	Asp	Gly	Val	Asn	Ser	His	Leu	Tyr	Tyr
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1415						1420					1425			
Glu	Arg	Asn	Lys	Asp	Leu	Leu	Glu	Thr	Cys	Ser	Glu	Asp	Lys	Arg
1430						1435					1440			

23

Leu His Leu Cys Cys Glu Ile Ser Asp Tyr Cys Leu Lys Phe Phe  
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Asn Pro Lys Ser Ile Glu Tyr Phe Asp Cys Thr Gln Lys Glu Phe  
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Asp Asp Pro Thr Tyr Asn Cys Phe Arg Lys Gln Arg Phe Thr Ser  
 1475 1480 1485

Met His Tyr Ile Ala Gly Gly Gly Ile Ile Ala Leu Leu Leu Phe  
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Ile Leu Gly Ser Ala Ser Tyr Arg Lys Asn Leu Asp Asp Glu Lys  
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Gly Phe Tyr Asp Ser Asn Leu Asn Asp Ser Ala Phe Glu Tyr Asn  
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